



# IMPARTING ART EDUCATION THROUGH FREE AND OPEN SOURCE SOFTWARE (FOSS): AN EXPERIMENT WITH SECONDARY SCHOOL STUDENTS

Dr. Deepak Mahakul

Visual Art Director, Navrachana School, Sama, Vadodara, Gujarat.

## ABSTRACT

Art Education is important for the development of holistic personality of learners and many policies in India have been suggested systematic implementation of Art Education in Indian schools. But this area is still neglected and needs proper implementation at different levels of schools. Free and Open Source Software (FOSS) is stipulated by a liberal licensing policy that makes it possible to be obtained free of charge along with the source code. FOSS has many advantages and one of the important advantage is that it is increasing growth of knowledge based society. Keeping in mind the benefits of FOSS, an experiment was done by imparting Art Education to secondary school students through FOSS. The experiment revealed positive result of the FOSS in Art Education. This paper highlights need of Art Education at school level, FOSS in Art Education, experiment of FOSS with secondary school students and its outcomes.

**KEY WORDS:** Art Education, Free and Open Source Software, FOSS for Digital Art.

## INTRODUCTION:

Art Education (AE) constitutes an important area of curriculum activity for development of the personality of the learners. The aim of AE is perceived as development of aesthetic sensibility among learners so as to enable them to respond to the beauty in line, colour, form, movement and sound. The study of art and understanding of cultural heritage through AE reinforce appreciation and understanding for one another. AE can provide the most satisfying medium of creative expression which has to be given due importance in the best interest of the society (National Curriculum Framework, NCF, 2000). Considering this statement of NCF (2000), it can be emphasized that arts both visual and performing need to become an important component of learning in the school curriculum. Children need to develop skills and abilities in these areas. The policy documents like, the Secondary Education Commission (1952-53), the Kothari Commission (1964-66), Shri K.G. Saiyidain Committee report (1966), the National Policy on Education (1986), the Programme of Action (1992), the NCFs (1975, 1988 & 2000) stated the importance of AE for the development of holistic personality of learners and suggested for the proper and systematic implementation of art education in the school curriculum at all stages.

## FREE AND OPEN SOURCE SOFTWARE (FOSS):

The term FOSS phrased first time on Usenet in 1998. FOSS can be classified in both free software and open-source software that is license free to use, copy, study and change the software in any way. The source code is openly shared in FOSS.

FOSS has many advantages like available on minimal cost, provides full freedom and better security, free from license, no imposed upgrades, no spying on users, auditability, no monopolies and its part of social movements.

Many FOSS are useful as digital art software tools. Some of them are, Inkspace, Seashore, GUMP, Blender, Scratch, SketchUp, ArtRage, Karbon14, and Krita that are useful for painting, touching, colouring, 3D creation, drawing and image editing.

## REVIEW OF RELATED LITERATURE:

A total of twenty six studies related to Art Education and Computer Based Education has been reviewed. The studies related to art education by Gibbs (1961), Sullivan (1984), Punja (1981), Wright (1985), Shotwell (1987), Smith (1992) deals with the descriptive analysis about the art education in schools. Parmeswaran (2001) developed a comprehensive art education curriculum for CBSE and RSBSE board. The study of NCERT deals with the process of art education at school and tries to find out the problems related to the art education at schools.

From the review of past researches carried out in the field of art education, it was observed that none so far have paid attention on secondary art education in India. Though Parmeswaran (2001) studied the secondary art education with a view to modify for updating it. The study attempted to develop a secondary school art education curriculum. However, none so far have tried to develop the computer based package in teaching art education at secondary level.

The experimental studies on computer education conducted by Gupta (1987), Prabhakar (1989), HSu (1994), Das (1998), Khirwadkar (1998), Nimtrakul (1999), Robkob (1999), Suwanma (1999), Vaisopha (1999), Wanna (1999),

Zyud (1999), Yadav (2000) and Dalwadi (2001) revealed that most of the studies used computer either in the form of CAI or CAL to teach different school subjects and in all the studies the packages were found to be significant in terms of enhancing students achievement. So the question emerges here that whether the FOSS is effective in imparting art education too like other subjects? Therefore, it is important to study the FOSS based art education.

Some studies conducted on the computers and art education. Studies conducted by Chumely (1987), Robkin (1987), Reeve (1988) and Allister (1990) used the computers in different forms to teach art education based on the comparison of traditional approach and in all the cases computer added art education teaching was found to be superior in comparison to the traditional approach. However, no Indian study was available in the area of art education and the use of computer and/or e-medium. Also the review of the studies implied that there is a need of computer based art education as there is an absolute lack of research in computer based art education in India. There is no proper interaction among teachers and students in the classes of art education and students are not satisfied with the traditional methodologies of teaching art which became the barrier in students learning as they can use FOSS for creating art and the traditional methods cannot be satisfied their creativity and interest in art. So, FOSS based art education can be useful to the students for practicing different arts at their convenient time. Thus, considering the implications of past studies, a need to conduct the study on imparting art education through FOSS to secondary school students. Thus, the present study is an attempt in this direction to impart art education through FOSS in secondary school.

## METHODOLOGY:

### Research Design:

The present study was experiment type in nature. Keeping in mind the basic objectives of teaching of Art Education i.e. introducing the students to new media and techniques and their use and developing creative expression among them, an experiment with secondary school students has been tried out. An attempt has been made to achieve basic objectives of the Art Education through the use of FOSS into creating visual art. The emphasis was made to use FOSS at maximum level in creating the said concepts of Art Education.

### Sample:

One division of standard IX of Navrachana School, Baroda, was selected for the experiment and all 35 students of the selected division were included in the experiment. The students were made aware about the different FOSS related to Art Education and how to use them in creating visual art. The benefits of FOSS were also described to them. The standard IX students were made aware about the different activities of visual art viz., Doodle, Pop-art, Painting, Still-life and Composition.

### Tool:

All sessions were observed with focusing on the creativity, behaviour, creation of art work by using FOSS and improvement in their art work.

### The Experiment:

A workshop was organized for three days with the standard IX students of the selected division. The students were asked about the easiness of the FOSS in creating visual art. The students were found Inkscape, Seashore, Scratch, SketchUp and ArtRage FOSS easy and very helpful in creating art. Based on the identified

FOSS in a workshop, students were assigned task to create visual art with the use of FOSS. Three different components were covered in the workshop. The art room was equipped with computers with related FOSS software, Scanners, Multimedia Projector.

The first exercise was Doodling. The concept was to how friendly use of the tools to create the art work in different colour to show the emotion by line and dots. GIMP software was very helpful for this exercise. The effect of the scribbling was done by selecting the line tool. The thickness of the line could be increased or decreased as per the need of the expression of the artist. The colour of the line also could be rectified where it was necessary. Apart from that the different tools like pencil, pen, brush strokes and spray etc were used to give a different layer with the help of texture and colour.



Another exercise was related to colour. How colour could be changed and arranged according to the need of the subject. KRITA software was used in this topic. This software was very fun loving to the children to give the different effect on the image. Any photograph in JPEG or GIF image could be opened through this software. The exercise demanded that any image can be arranged in multiples in a single page. They then changed the colour of each image through the selection tool and changed the colour with brightness control. The image were arranged in such a way, that the whole painting looked in balance and rhythm. Here children understood about the co-relation of the colour arrangement and softness. Apart from colour the image were also modified in different textures and effects. In this exercise the visualisation of colour and the mode of change of another medium were found more interesting and fun-loving.



Third exercise was related to graphic design. The software used was Inkspace. As this software is little challenging as compared to corel-draw, the students took time to understand and familiarize with the tools. The topic was to make a social campaign with slogan. They inserted the image and added the graphics as per their requirements. The division of space and cropping the image was done nicely with the features of this FOSS. They also wrote the slogan and gave an appropriate font to it. The text and image was arranged and balanced to give a poster effect. This software has the graphic measurement mark line which helps

to give proportion. This exercise made them as a graphic designer with proper scale and balance between text and image.



#### Data Analysis:

The outcomes were noted down and analyzed in content form. Discussion was also held with the students to know their views about the use of FOSS in Art Education.

#### RESULT:

Based on the experiment, following results were obtained.

- Students could take advantage of the qualities and characteristics of art media, techniques, and processes to enhance communication of their experiences and ideas.
- Students generalized the effects of visual structures and functions and reflected upon these effects in their own work.
- Students integrated visual, spatial, and temporal concepts with content to communicate intended meaning in their artworks.
- Students compared multiple purposes for creating works of art.
- Students combined different techniques and tools in their drawing to add visual interest.
- Students used the line tools to draw perfectly straight lines.
- Students composed with the shape tools by drawing triangles, circles and squares.
- Students overlapped and intersected them to create abstract drawings.
- Students used the colour fill tool to add hues to their shapes and in the spaces between them.
- Students made use of the eraser tool when they made a mistake.
- Students painted over larger areas with white when they did not like them.
- Students found to be creative and the tools lead them into experimenting with lines, shapes and colours.
- Students printed out and framed their best drawings and used them as back-grounds on their computer screen.

#### CONCLUSION:

Technology is affecting the way we develop curriculum, deliver instruction and assess student learning in arts education. While the content in the arts disciplines is most important, technology in the hands of professional arts educators will provide students more varied and challenging experiences and the ability to work at their own pace. Technology will also provide the resources for students to take charge of their learning. The potential success of using technology for better learning experiences in AE rests with the teachers. Arts specialists can choose the way technology integrates with the curriculum, not only need continued training in basic computer skills, they need professional development in specific hardware and software related to improving the learning experience in each of the arts disciplines. Educational systems, professional arts organizations and arts specialists should lobby for technology to be part of the arts classroom. As educators, we should also ensure that teachers have professional development opportunities that address delivering the curriculum standards, instruction and assessment with technology integrated in each part. It will take all members of the arts education community to prepare our students to become performers and consumers of the arts while realizing the lifelong benefits.

As the experiment reveals that using FOSS in AE results in cost savings for both the schools and students, integrating FOSS into teaching-learning will expand the horizons of learning. Students can also install the FOSS software in their own computers without restrictions, and can practice in their convenient time. However, it may be necessary for the teachers to be trained in the use of different FOSS of their subject so that they can be competent to conduct classes using these software. Modification of the curriculum is necessary and some effort will have to be put into developing suitable teaching materials with the use of FOSS which will be profitable.

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